

What Is Claimed Is:

1. A sensor for measuring a physical property of a measuring gas, in particular the oxygen concentration or the temperature in the exhaust gas of an internal combustion engine in a motor vehicle, having a housing (11), a measuring element (16) which is accommodated in the housing (11) and whose end section (162) used for contacting purposes protrudes from the housing (11), a connector plug (24) mounted on the end section (162), and a housing shell (29) which covers the end section (162) and connector plug (24) with a radial clearance and whose one shell end (291) is attached to the housing (11) and whose other shell end (292) is sealed, wherein a free space (31) present inside the housing shell (29) is completely filled with a material (33).
2. The sensor as recited in Claim 1, wherein the material (33) is filled in as a bulk material.
3. The sensor as recited in Claim 2, wherein the material is a non-conductive, inorganic material in the form of a granulate.
4. The sensor as recited in Claim 3, wherein the material is quartz sand or granulated corundum.
5. The sensor as recited in one of Claims 1 through 4, wherein, after the material (33) is filled in, a molded body (32) is introduced into the housing shell (29) to seal the shell end (292) of the housing shell (29) facing away from the housing (11), connecting cables (27) connected to the connector plug (24) being passed through the molded body.
6. The sensor as recited in Claim 5,

wherein the housing shell (29) and the molded body (32) are radially pressed together.

7. The sensor as recited in Claim 1, wherein the material (33') is a temperature-resistant, porous foam.
8. The sensor as recited in Claim 7, wherein orthosilicic acid (H_4SiO_4) is used as the foam-building material, the molecules of which assume a colloidal structure when water is split off and silicon dioxide chain molecules are formed.
9. The sensor as recited in Claim 8, wherein the shell end (292) of the housing shell (29) facing away from the housing (11) is occluded by a molded body (32), through which the connecting cables (27) connected to the connector plug (24) are passed; and an upper radial borehole (34), which is preferably situated above the connector plug (24), and a radial borehole (35), which is preferably situated below the connector plug (24) and is used for introducing the foam-forming material, are positioned in the housing shell (29).
10. The sensor as recited in Claim 9, wherein the lower borehole (35) is sealed, preferably welded shut, after the introduction of the foam-forming material.
11. The sensor as recited in Claim 9 or 10, wherein the diameter of the lower borehole (35) is approximately 1 mm to 3 mm.
12. The sensor as recited in one of Claims 1 through 11, wherein the housing shell (29) is attached in a gas-tight manner to the housing (11), preferably by welding the shell edge to the housing (11).